

PENDING CLAIMS

Please cancel claim 1 without prejudice to the Applicants.

b3 2. (Twice Amended) The method of claim 17, further comprising measuring, by the receiving entity, a quality level of a link between the transmitting entity and the receiving entity, and wherein the step of sending the retransmission indicator includes sending from the receiving entity to the transmitting entity, at least one link quality indicator indicating the quality level of the link.

b3 3. (Amended) The method of claim 18, wherein the steps of selecting an MCS for encoding the additional subblocks are performed at the receiving entity, and the step of sending the retransmission indicator to the transmitting entity includes sending a selected MCS to the transmitting entity for encoding the additional subblocks of data.

4. (Amended) The method of claim 18, wherein the steps of selecting an MCS for encoding the additional subblocks are performed at the transmitting entity based upon the retransmission indicator received from the receiving entity.

Please cancel claim 5 without prejudice to the Applicants.

b3 6. (Amended) The method of claim 18, further comprising measuring, by the receiving entity, a quality level of a link between the transmitting entity and the receiving entity, and sending a link quality indicator to the transmitting entity, wherein the steps of selecting an MCS for encoding the additional subblocks are performed at the transmitting entity and are based upon the retransmission indicator and the link quality indicator received from the receiving entity.

Please cancel claim 7 without prejudice to the Applicants.

Subj 8. (Amended) The method of claim 3, wherein said transmitting entity encodes new data blocks utilizing a first MCS based on the selected MCS received from the receiving entity, and encodes the additional redundant subblocks of data utilizing a second MCS based on the retransmission indicator.

Subj 9. (Twice Amended) A method of transferring information between a transmitting entity and a receiving entity comprising the steps of:

identifying an initial modulation/coding scheme (MCS) in a command sent from the receiving entity to the transmitting entity;

encoding initial blocks of data utilizing the identified initial MCS;

transmitting the encoded initial blocks of data from the transmitting entity to the receiving entity;

sending a segmentation indicator from the receiving entity to the transmitting entity indicating whether data blocks that the receiving entity could not decode should be resegmented by the transmitting entity prior to retransmission to the receiving entity;

selecting by the transmitting entity, a retransmission MCS to be utilized for retransmitting the data blocks that the receiving entity could not decode;

if the selected retransmission MCS is different from the initial MCS, re-encoding by the transmitting entity utilizing the selected retransmission MCS, the data blocks that the receiving entity could not decode; and

retransmitting the re-encoded data blocks to the receiving entity, said retransmitted data blocks being resegmented or not resegmented in accordance with the segmentation indicator.

Please cancel claims 10 and 11 without prejudice.

Subj 12. (Amended) The method of claim 33, wherein the segmentation indicator and the retransmission MCS are sent from the receiving entity to the transmitting entity in a single message.

B6 Cont. 13. (Amended) The method of claim 9, wherein the step of sending the segmentation indicator includes sending at least one link quality measurement from the receiving entity to the transmitting entity.

Please cancel claim 14 without prejudice to the Applicants.

B6 15. (Twice Amended) A receiver comprising:
a memory for storing received initial data blocks;
a decoder for decoding received initial data blocks and determining whether any of the received initial data blocks cannot be decoded;
means for determining whether the receiver has sufficient resources available for the receiver to utilize an incremental redundancy operating mode to obtain additional redundant subblocks of data for additional attempts to decode the initial data blocks that could not be decoded, wherein, in the incremental redundancy operating mode, additional redundant subblocks of data associated with the initial data blocks that could not be decoded are repeatedly retransmitted to the receiver until the receiver successfully decodes the data blocks that could not be decoded, said receiver combining the additional redundant subblocks of data with the initial data blocks, and utilizing a joint decoding process; and
means for transmitting a message to a transmitter indicating a preferred operating mode, said message indicating that the preferred operating mode is the incremental redundancy mode if the receiver has sufficient resources available to store and jointly decode the received initial data blocks as well as the additional redundant subblocks of data, and said message indicating that the preferred operating mode is a non-incremental redundancy mode if the receiver does not have sufficient resources to utilize the incremental redundancy operating mode.

CP 16. (New) The receiver of claim 15, further comprising:

means for combining the received initial data blocks and the additional redundant subblocks of data when the incremental redundancy operating mode is being utilized; and

means for jointly decoding the combined data blocks and subblocks of data.

B8 17. (New) A method of transferring information between a transmitting entity and a receiving entity comprising the steps of:

encoding blocks of data utilizing an initial modulation/coding scheme (MCS), thereby generating encoded data blocks;

generating from each of the encoded data blocks, at least one initial subblock of data, each initial subblock containing all or a subset of the bits of the encoded data block;

transmitting for each of the encoded data blocks, the initial subblocks of data from the transmitting entity to the receiving entity;

receiving and storing the initial subblocks of data at the receiving entity;

determining, at the receiving entity, whether available resources of the receiving entity will support reception of additional redundant subblocks of data utilizing an incremental redundancy mode in which the additional redundant subblocks are repeatedly retransmitted to the receiving entity until the receiving entity successfully decodes the initial subblocks of data in a joint decoding process with the additional redundant subblocks; and

sending a retransmission indicator from the receiving entity to the transmitting entity, said retransmission indicator indicating whether or not operation in the incremental redundancy mode is preferred, said incremental redundancy mode being preferred if the available resources of the receiving entity will support reception of additional redundant subblocks of data utilizing the incremental redundancy mode.

18. (New) The method of claim 17, further comprising the steps of:

if the retransmission indicator indicates that operation in the incremental redundancy mode is preferred, selecting an MCS for encoding and generating the additional redundant subblocks taking into account that the receiving entity can perform joint decoding of an initial subblock with its associated additional redundant subblocks of data; and

if the retransmission indicator indicates that operation in the incremental redundancy mode is not preferred, selecting the MCS for encoding and generating the additional redundant subblocks taking into account that the receiver cannot perform joint decoding of an initial subblock with its associated additional redundant subblocks of data, but must decode the data block that could not be decoded utilizing a single additional redundant subblock of data.

19. (New) The method of claim 18, wherein the steps of selecting an MCS for encoding and generating the additional redundant subblocks also include selecting an MCS for encoding future initial subblocks of data to be transmitted from the transmitting entity to the receiving entity.

20. (New) A method in a receiver for decoding received blocks of data, said method comprising the steps of:

storing received initial data blocks in a memory;

determining whether the receiver has sufficient resources available for the receiver to utilize an incremental redundancy operating mode to obtain additional redundant subblocks of data;

sending a message to a transmitter indicating that the incremental redundancy operating mode is preferred, upon determining that the receiver has sufficient resources available to utilize the incremental redundancy operating mode; and

sending a message to the transmitter indicating that a non-incremental redundancy operating mode is preferred, upon determining that the receiver does not have sufficient resources available to utilize the incremental redundancy operating mode.

21. (New) The method of claim 20, wherein the message to the transmitter indicates that the incremental redundancy operating mode is preferred, and the method further comprises the steps of:

receiving additional redundant subblocks of data;

combining the received additional redundant subblocks of data with the initial data blocks; and

utilizing a joint decoding process to decode the combined initial data blocks and additional redundant subblocks of data.

22. (New) A method in a transceiver for encoding blocks of data and transmitting said encoded data blocks to an external receiver, said method comprising the steps of:

encoding blocks of data utilizing an initial modulation/coding scheme (MCS), thereby generating encoded data blocks;

generating from each of the encoded data blocks, at least one initial subblock of data, each initial subblock containing all or a subset of the bits of the encoded data block;

transmitting for each of the encoded data blocks, the initial subblocks of data to the external receiver;

receiving a message from the external receiver indicating a preferred operating mode for transmitting additional redundant subblocks of data to the receiver;

encoding the additional redundant subblocks of data utilizing an MCS appropriate for the preferred operating mode indicated in the message from the receiver; and

transmitting the encoded additional redundant subblocks of data to the external receiver utilizing the preferred operating mode.

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23. (New) The method of claim 22, wherein the step of encoding the additional redundant subblocks of data includes encoding the additional redundant subblocks of data with an MCS appropriate for joint decoding of an initial subblock with its associated additional redundant subblocks, if the message from the external receiver indicates that the preferred operating mode is an incremental redundancy mode.

24. (New) The method of claim 22, wherein the step of encoding the additional redundant subblocks of data includes encoding the additional redundant subblocks of data with an MCS appropriate for decoding utilizing a single additional redundant subblock of data, if the message from the external receiver indicates that the preferred operating mode is a non-incremental redundancy mode.

25. (New) The method of claim 22, wherein the steps of selecting an MCS for encoding the additional redundant subblocks also include selecting an MCS for encoding future initial subblocks of data to be transmitted from the transmitting entity to the receiving entity.

26. (New) The method of claim 9, wherein the receiving entity sets the segmentation indicator to indicate that retransmitted data blocks should not be resegmented if the receiving entity has sufficient resources available to support an incremental redundancy mode of retransmitting the data blocks that could not be decoded.

27. (New) The method of claim 9, wherein the receiving entity sets the segmentation indicator to indicate that retransmitted data blocks should be resegmented if the receiving entity does not have sufficient resources available to support an incremental redundancy mode of retransmitting the data blocks that could not be decoded.

28. (New) A transceiver for encoding blocks of data and transmitting said encoded data blocks to an external receiver, said transceiver comprising:

an encoder for encoding blocks of data utilizing a modulation/coding scheme (MCS) selected from a plurality of MCSs that the encoder is capable of utilizing;

means for generating from each of the encoded data blocks, at least one initial subblock of data, each initial subblock containing all or a subset of the bits of the encoded data block;

means for transmitting the initial subblocks of data to the external receiver, and if required, transmitting additional redundant subblocks of data to the receiver;

means for receiving a message from the external receiver indicating a preferred operating mode for transmitting additional redundant subblocks of data associated with data blocks that the receiver could not decode; and

means within the encoder for encoding the additional redundant subblocks of data utilizing an MCS appropriate for the preferred operating mode indicated in the message from the receiver, and providing the encoded additional redundant subblocks of data to the transmitting means for transmission to the external receiver utilizing the preferred operating mode.

29. (New) The transceiver of claim 28, wherein the steps of selecting an MCS for encoding the additional redundant subblocks also include selecting an MCS for encoding future initial subblocks of data to be transmitted from the transmitting entity to the receiving entity.

30. (New) The method of claim 9, wherein the selecting step includes the steps of:

selecting the retransmission MCS according to a first predetermined rule if the segmentation indicator indicates that the retransmitted data blocks are not to be resegmented; and

selecting the retransmission MCS according to a second predetermined rule if the segmentation indicator indicates that the retransmitted data blocks are to be resegmented.

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31. (New) The method of claim 30, wherein the selecting step includes the steps of:

selecting the initial MCS used for the initial transmission of the data blocks, or another MCS that does not require resegmentation of the block of data, if the segmentation indicator indicates that the retransmitted data blocks are not to be resegmented; and

selecting an MCS that may be more robust or less robust than the initial MCS, and may require resegmentation of the initial blocks of data, if the segmentation indicator indicates that the retransmitted data blocks are to be resegmented.

32. (New) The method of claim 9, further comprising the steps of:

measuring, by the receiving entity, a quality level of a link between the transmitting entity and the receiving entity; and

sending from the receiving entity to the transmitting entity, at least one link quality indicator indicating the quality level of the link;

wherein the step of selecting by the transmitting entity, a retransmission MCS includes selecting a retransmission MCS based upon the link quality indicator and the segmentation indicator.

33. (New) A method of transferring information between a transmitting entity and a receiving entity comprising the steps of:

identifying an initial modulation/coding scheme (MCS) in a command sent from the receiving entity to the transmitting entity;

encoding initial blocks of data utilizing the identified initial MCS;

transmitting the encoded initial blocks of data from the transmitting entity to the receiving entity;

sending a segmentation indicator from the receiving entity to the transmitting entity indicating whether data blocks that the receiving entity could not decode should be resegmented by the transmitting entity prior to retransmission to the receiving entity;

selecting by the receiving entity, a retransmission MCS to be utilized by the transmitting entity for retransmitting the data blocks that the receiving entity could not decode;

sending the selected retransmission MCS from the receiving entity to the transmitting entity;

if the selected retransmission MCS is different from the initial MCS, re-encoding by the transmitting entity utilizing the selected retransmission MCS, the data blocks that the receiving entity could not decode; and

retransmitting the re-encoded data blocks to the receiving entity, said retransmitted data blocks being resegmented or not resegmented in accordance with the segmentation indicator.

34. (New) The method of claim 17, further comprising, after receiving and storing the initial subblocks of data at the receiving entity, the step of determining at the receiving entity whether any of the data blocks cannot be decoded from the received initial subblocks of data, and wherein, the step of determining whether available resources of the receiving entity will support reception of additional redundant subblocks includes, upon determining that at least one of the data blocks cannot be decoded, determining whether available resources of the receiving entity will support reception of additional redundant subblocks of data containing additional redundant bits of the data blocks that cannot be decoded.

IN THE DRAWINGS

A corrected version of FIGS. 7 and 8 is enclosed showing corrections of typographical errors marked in red. A replacement formal drawing of FIGS. 7 and 8 is also enclosed. The Examiner's approval of the drawing change is respectfully requested.

Formal drawings reflecting the previous amendment to add a "Prior Art" legend to FIGS. 1(a), 1(b), 2, 3, 4(a), 4(b), and 5(a) are also enclosed.